

NSNFP Overview

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SNF Strategy Meeting
June 26, 2001

NSNFP Mission

Provide the technology and guidance needed to ensure safe, efficient handling, characterization and disposition of Department of Energy-owned spent nuclear fuel.

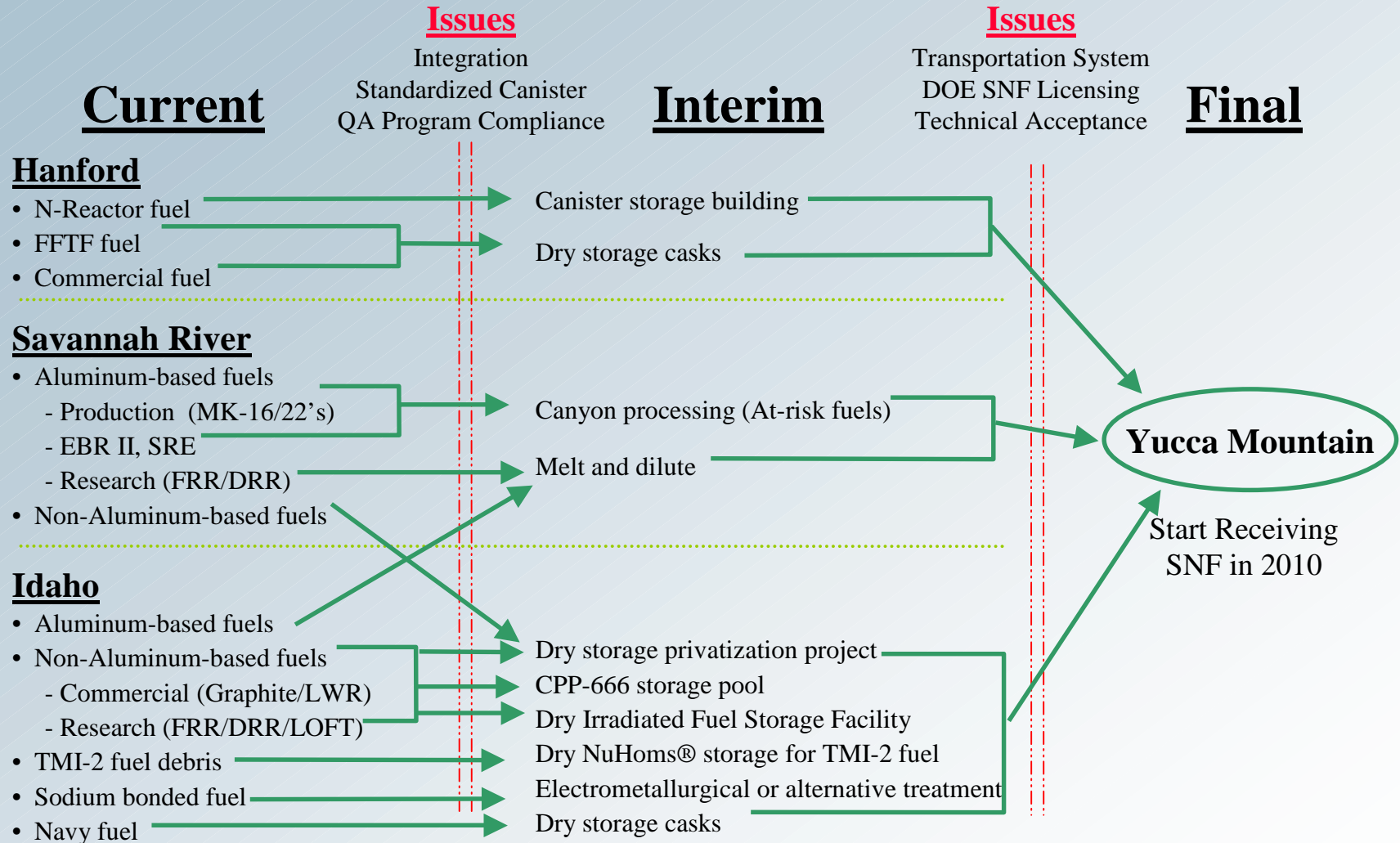
Objectives

- *Provide the technology needed to package, store, and dispose of DOE-owned spent nuclear fuel*
- *Ensure the Yucca Mountain repository license includes DOE-owned spent nuclear fuel*
- *Ensure repository waste acceptance criteria is established for all DOE-owned spent nuclear fuel*
- *Provide packaging and characterization guidance to all DOE sites*

Program Focus

- *DOE-owned spent nuclear fuel*
 - *Integration with sites and YMP*
 - *Elimination of activities gaps/duplication*
 - *Cost savings*
- *Coordination of complex-wide SNF issues*
- *Standardized DOE spent nuclear fuel canister*
- *DOE spent nuclear fuel transportation system coordination*
- *Repository support activities (TSPA, DBE, Criticality)*
- *Materials performance*
- *Characterization*

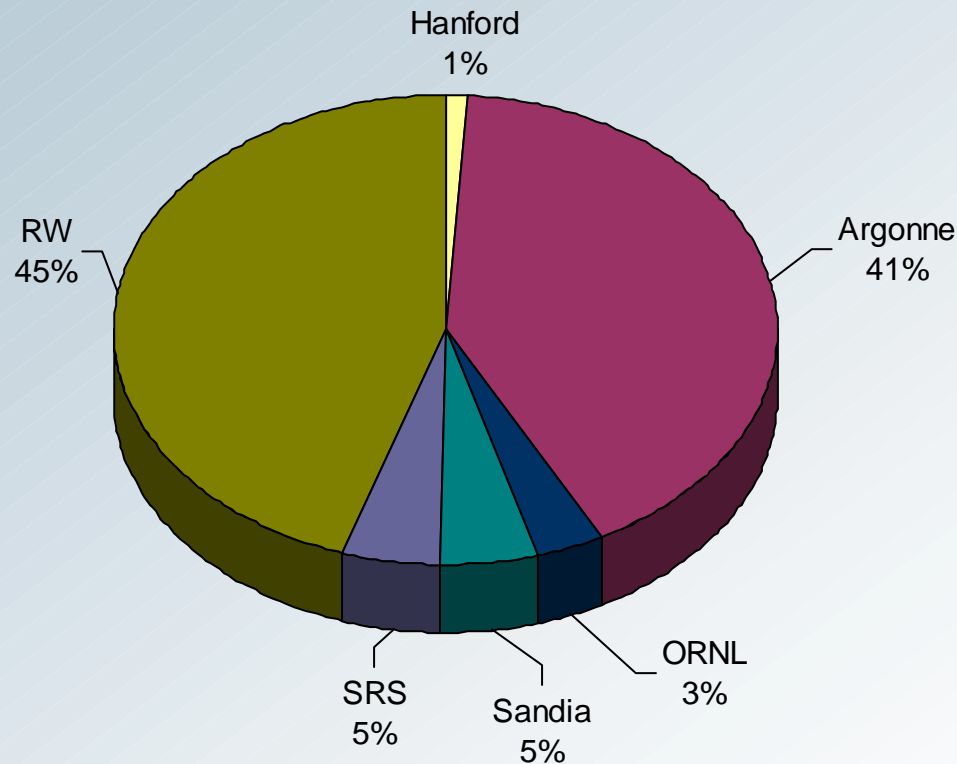
Spent Fuel Management Strategy



NSNFP Utilizes the Best Expertise Within the DOE Complex

FY 2001 Breakdown

Other Lab Total
FY 2001 - \$ 4,641K



NSNFP Collaborators

- *Office of Civilian Radioactive Waste Management*
- *Savannah River Technology Center*
- *Pacific Northwest National Laboratory/Hanford*
- *Argonne National Laboratory (East & West)*
- *Oak Ridge National Laboratory*
- *INEEL*
- *Sandia National Laboratories*
- *Lehigh University*
- *University of Michigan*
- *Idaho State University*

International Collaborations

- *Russia*
 - *Criticality studies*
 - *MDAS, software development*
- *International Atomic Energy Agency*
- *Atomic Energy of Canada Limited*

Programmatic Interfaces

- *YMP - Repository license application*
 - *Waste acceptance criteria input for DOE-owned spent nuclear fuel*
 - *Waste Acceptance System Requirements Document*
- *Integrated repository receipts schedule*
- *DOE Sites*
 - *Spent nuclear fuel characterization and acceptance criteria*
- *Naval Programs*
- *EM/NE HLW programs*
- *Nuclear Regulatory Commission interface support*
- *EM-50 Programs (NMFA, EMSP, DNFSB 97-2)*

NSNFP - An Integral Part of the DOE Spent Nuclear Fuel Mission

- *Providing technology needed for packaging, storage, transportation, and disposal of DOE spent nuclear fuel*
- *Actively deploying research and development to meet DOE spent nuclear fuel site needs*
- *Ensuring inclusion of DOE spent nuclear fuel in the repository site recommendation and license application*
- *Seeking cost-effective solutions to the DOE spent nuclear fuel needs*

Technical Acceptance

Requirements

- Waste Acceptance (WASRD)
- Program Interfaces (ICD's)
- Quality Assurance (QARD)

Analysis

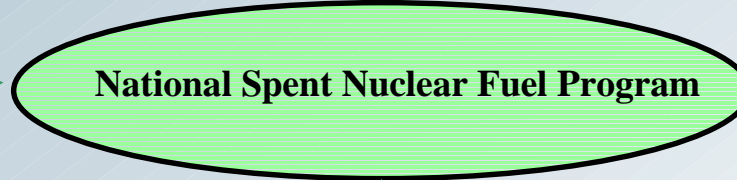
- Performance analyses
- Criticality Analyses
- Design basis events

License Application

- Grouping
 - 250 fuel types → 10 groups
- Packaging approaches
 - Standard canister/HIC
 - Neutron absorbers
- Conduct of Operations
 - Surface facilities
 - Transportation

Compliance

- Data needs
- Characterization



NSNFP Accomplishments FY 01

- *Developed the DOE SNF Repository Safety Case showing those systems, structures, components and barriers that are important to safety and anticipated to be used in the repository licensing basis*
- *Completed the criticality analysis summary report for N-Reactor SNF*
- *Provided DOE SNF total System Performance (TSPA) input into Yucca Mountain Site Recommendation Rev 1*
- *Completed the first successful beam run of the Multi Detector Analysis System (MDAS) at ORELA*
- *Completed and issued the release rate characterization report for uranium metal fuel*
- *Performed Quality Assurance audits and surveillances at the INEEL, Hanford Savannah River and Oak Ridge*

NSNFP Accomplishments FY 01 (continued)

- *Performed analysis of the modified standardized canister design being proposed by the INEEL privatized dry storage contractor*
- *Successfully fabricated and characterized Gadolinium Phosphate powder with a calcination process and completed two heats of the Ni-Cr-Mo-Gd alloys*
- *Completed the DOE-EM Spent Nuclear Fuel Transportation System Design and Licensing Specifications*
- *Revised and issued the NSNFP Program Management Plan*

NSNFP Accomplishments FY 01 (continued)

- *Conducted two Peer reviews of the MDAS system*
- *Reorganized the NSNFP QA function with the QAPM reporting functionally to the Manager, NSNFP while retaining independence*
- *Coordinated the revision of the Integrated Repository receipt Schedule with SNF sites, HLW and RW*
- *Issuance of two NSNFP “News”*
- *Substantially completed source term templates for 10 fuels*
- *Completed criticality reports on N-Reactor, FSV fuels*
- *Continuing release rate drip tests, batch tests and colliodal analysis with MOX and U metal fuels*